AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 3, lines 11-28, as follows:

Fig 2 ~~Plot of mean temperature ± 1 standard deviation for condition 1 when no heat source is considered and the boundary conditions employed are constant surface temperature and constant surface heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface temperature is constant and there is a constant surface heat flow and when there is no heat source. As depicted, for example, input boundary conditions are set such that the surface temperature, T0 =0°C; surface heat flow, QS =80 mW/m^2, K =3 is the thermal conductivity of the surface; and CK =0.4 is the coefficient of variability in the thermal conductivity. Then, as also shown, at a depth of 2KM from the surface the determined mean temperature (t[i]) is 53.0°C, upper bound temperature (tub[i]) is 69.0°C and lower bound temperature is 37.0°C. The standard deviation is 16.0.

Fig 3 ~~Plot of mean temperature ± 1 standard deviation for condition 2 when no heat source is considered and the boundary conditions employed are constant surface temperature and constant basal heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface temperature is zero and there is a constant basal heat flow and when there is no heat source. For example, as shown, input boundary conditions are set so that surface temperature, T0 =0°C; basal heat flow, QB is 30 mW/m^2, K is the thermal conductivity of the surface; and CK is the coefficient of variability in the thermal conductivity. Then, as shown, at a depth of 3KM from the surface the mean temperature (t[i]) is 45.0°C, upper bound temperature (tub[i]) is 59.0°C and lower bound temperature is 31.0°C. The standard deviation is 14.0.

Fig 4 ~~Plot of mean temperature ± 1 standard deviation for condition 3 when a constant heat source is considered and the boundary conditions employed are constant surface~~

~~temperature and constant surface heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface temperature is constant and there is a constant surface heat flow and in the presence of a constant heat source. For example, as shown, input boundary conditions are set so that surface temperature, T0 =30°C; surface heat flow, QS is 40 mW/m^2, K is the thermal conductivity of the surface; CK is the coefficient of variability in the thermal conductivity and A is the radiogenic heat source kept at 2.5μW/m^3. Then, as shown, at a depth of 7.5KM from the surface the mean temperature (t[i]) is 106.0°C, upper bound temperature (tub[i]) is 118.0°C and lower bound temperature is 94.0°C. The standard deviation is 12.0.

Fig 5 ~~Plot of mean temperature ± 1 standard deviation for condition 4 when a constant heat source is considered and the boundary conditions employed are constant surface temperature and constant basal heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface temperature is constant and there is a constant basal heat flow and in the presence of constant heat source. For example, as shown, input boundary conditions are set so that surface temperature, T0 =30°C; basal heat flow, QB is 20 mW/m^2, K is the thermal conductivity of the surface; CK is the coefficient of variability in the thermal conductivity and A is the radiogenic heat source kept at 2.5μW/m^3. Then, as shown at a depth of 7.5KM from the surface the mean temperature (t[i]) is 119.0°C, upper bound temperature (tub[i]) is 145.0°C and lower bound temperature is 93.0°C. The standard deviation is 26.0.

Fig 6 ~~Plot of mean temperature ± 1 standard deviation for condition 5 when an exponential heat source is considered and the boundary conditions employed are constant surface temperature and constant surface heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface

temperature is constant and there is a constant surface heat flow and when an exponential heat source is considered. For example, as shown, input boundary conditions are set so that surface temperature, T0 =30°C; surface heat flow, QS is 43 mW/m^2, K is the thermal conductivity of the surface; CK is the coefficient of variability in the thermal conductivity and A is the radiogenic heat source kept at 2.6$\mu W/m^3$. Then, as shown at a depth of 35.0KM from the surface the mean temperature (t[i]) is 285.0°C, upper bound temperature (tub[i]) is 345.0°C and lower bound temperature is 225.0°C. The standard deviation is 60.0.

Fig 7 ~~Plot of mean temperature ± 1 standard deviation for condition 6 when an exponential heat source is considered and the boundary conditions employed are constant surface temperature and constant basal heat flow~~is a computer input/output screen graphical representation of the subsurface temperature obtained at various depths when surface temperature is constant and there is a constant basal heat flow and when an exponential heat source is considered. For example, as shown, input boundary conditions are set so that the surface temperature, T0 =0°C; basal heat flow, QB is 20 mW/m^2, K is the thermal conductivity of the surface; CK is the coefficient of variability in the thermal conductivity and A is the radiogenic heat source kept at 2.2$\mu W/m^3$. Then, as shown at a depth of 35KM from the surface the mean temperature (t[i]) is 342.0°C, upper bound temperature (tub[i]) is 398.0°C and lower bound temperature is 286.0°C. The standard deviation is 56.0.